TE-II | Comp | Adv. Database Mgt System

15.05.14

QP Code : **MV-18404**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Questions No. **1** is **compulsory**.
(2) Attempt any **four** out of the remaining **six** questions.
(3) Assume any suitable data whenever required.

1. Design collgege library database system. Students are registered to library to borrow the various titles like Books, Journals and Magazines. All transactions like issue and return are stored. Students can issue maximum 3 titles. All titles in library are supplied by different suppliers.

   (a) construct EER diagram for the system. **6**

   (b) Map the EER to relational schema. **8**

   (c) Write 3 typical quieries in SQL. **6**

2. (a) Explain left, right, outer, inner and equijoin with examples. **10**

   (b) Describe object relational features of SQL3. **10**

3. (a) Explain macro life cycle in database design methodology. **10**

   (b) Explain various parallel database architectures. **10**

4. (a) Explain merge join and hash join algorithms. **10**

   (b) What is heuristic rules in query optimization? Explain transformation rules. **10**

5. (a) What is DTD? Write DTD for an XML schema of following relational schema **10**
   Library (code, name, bookset set of (books));
   Books (Acc - no, title, author, pub-detailset set of (pub-details))
   pub-details (ISBN no, add, year)
   Students (id, name, branch)
   borrowed-by (Acc - no, id, date

   (b) What is XML application? Explain querying and transformation of XML data. **10**

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6. (a) Consider following schema : 10

Dept (Dno, Dname, location, staff)
Emp (Eno, Ename, salary, Dno)
Works (Eno, Pno, Role)
Proj (Pno, Pname, Ptype, Pbudget)

(i) Give two examples of horrizontal and vertical fragmentation each.
(ii) Give derived horrizontal fragmentation on Emp and Dept relation. Write the resultant fragmentation.

(b) How concurrency control and recovery done in distributed databases. 10

7. Write short note on any **four** :- 20

(1) Client server architecture
(2) Database storage and access methods.
(3) Exist and Not Exist clauses in SQL.
(4) Measures of query cost.
(5) Aggregate functions in SQL.
